

Claims

Amendments to the Claims:

1. – 27. [WITHDRAWN]

28. [ORIGINAL] A system for treating mucosal tissue in an esophagus, said system comprising:
an elongated member; an energy delivery structure deployable from the elongated member
and adapted to deliver energy to at least a portion of a circumferential section of the mucosal lining
of the esophagus; and

means for delivering energy through the delivery structure under conditions selected to
initiate regrowth of a mucosal layer without substantial injury to a submucosal layer underlying the
mucosal layer.

29. [ORIGINAL] A system as in claim 28, wherein the energy delivery structure comprises an
expandable structure deployable from the elongated member.

30. [ORIGINAL] A system as in claim 29, wherein the expandable structure comprises an
expandable balloon.

31. [ORIGINAL] A system as in claim 30, wherein the balloon is non-distensible and dimensionally
stable.

32. [ORIGINAL] A system as in claim 30, wherein the balloon is elastic.

33. [CURRENTLY AMENDED] A system as in any of ~~claims 28~~ claims 30 to 32, wherein the
energy delivery structure further comprises an electrode array.

34. [ORIGINAL] A system as in claim 33, wherein the electrode array comprises bipolar electrode
pairs formed over at least a portion of the outer surface of the balloon, wherein the spacing between
the electrodes is no more than 3 mm.

35. [ORIGINAL] A system as in claim 34, wherein the electrodes are aligned axially on the balloon.

36. [ORIGINAL] A system as in claim 34, wherein the electrodes are aligned circumferentially over
the balloon.

37. [ORIGINAL] A system as in claim 33, wherein the balloon includes electrodes of a common
polarity formed over at least a portion of its exterior surface.

38. [ORIGINAL] A system as in claim 33, wherein the balloon includes electrodes of a common polarity formed over at least a portion of its inner surface.
39. [ORIGINAL] A system as in any of claims 30 to 32, wherein the balloon is inflatable with a conductive medium to form a monopolar electrode.
40. [ORIGINAL] A system as in claim 29, wherein the expandable structure comprises a frame deployable from the elongated member and an electrode array formed over at least a portion of the frame.
41. [ORIGINAL] A system as in claim 40, wherein the frame comprises an arcuate surface which carries the electrodes to engage a partial section of the circumference of the esophagus.
42. [ORIGINAL] A system as in claim 41, wherein the frame comprises two oppositely facing arcuate surfaces.
43. [ORIGINAL] A system as in claim 28, wherein the energy delivery structure comprises a heating structure.
44. [ORIGINAL] A system as in claim 43, wherein the heating structure comprises a radiation heat source.
45. [ORIGINAL] A system as in claim 44, wherein the energy delivery structure further comprises a pair of expandable centering elements disposed distally and proximally of the radiation heat source.
46. [ORIGINAL] A system as in any one of claims 43 to 45, wherein the radiation heat source is a filament, spherical radiator, cylindrical radiator, or polygonal radiator.
47. [ORIGINAL] A system as in claim 28 wherein the energy delivery means comprises a photonic source.
48. [ORIGINAL] A system as in claim 28, wherein the energy delivery means comprises a radiofrequency power supply.
49. [ORIGINAL] A system as in claim 48, wherein the radiofrequency power supply is adaptable to deliver an energy dosage in the range from 1 J/cm^2 to 50 J/cm^2 over a time period less than 5 seconds.